SOLICITATION / CONTRACT / ORDER FOR COMMERCIAL ITEMS

OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30

1. REQUISITION NUMBER	PAGE 1 OF 20

2. CONTRACT NO.	3. AWARD/EFFECTIVE DATE 05/11/2010	4. ORDER NUMBER	5. SOLICITATION NUMBER N10PS18314	6. SOLICITATION ISSUE DATE 04/28/2010

7. FOR SOLICITATION INFORMATION CALL:	a. NAME Ryan Pregot	b. TELEPHONE NUMBER *(No collect calls)* (703) 964-3575 ext.	8. OFFER DUE DATE/ 05/21/2010 LOCAL TIME 1:00 pm

9. ISSUED BY CODE 00004

NBC - Acquisition Services Directorate
381 Elden Street, Suite 4000

Herndon, VA 20170-4817
TEL: (703) 964-3699 ext.
FAX: (703) 964-5300 ext.

10. THIS ACQUISITION IS
- ☑ UNRESTRICTED
- ☐ SET ASIDE: 0.00% FOR
  - ☐ SMALL BUSINESS
  - ☐ HUBZONE SMALL BUSINESS
  - ☐ 8(A)

NAICS: 333132
SIZE STANDARD: 251-500

11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED
- ☐ SEE SCHEDULE

12. DISCOUNT TERMS
10 days %
20 days %
30 days %
days %

- ☐ 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)

13b. RATING

14. METHOD OF SOLICITATION
- ☑ RFQ ☐ IFB ☐ RFP

15. DELIVER TO CODE 17b

See Line Item Extended Description
See line item description

Attn: No Contacts Identified

16. ADMINISTERED BY CODE 00004

NBC - Acquisition Services Directorate
381 Elden Street, Suite 4000

Herndon, VA 20170-4817

17a. CONTRACTOR/ OFFEROR CODE ____ FACILITY CODE ____

No Contractor Information Available

TELEPHONE NO.

18a. PAYMENT WILL BE MADE BY CODE govpay

GovPay Electronic Invoicing at http:www.govpay.gov
e-mail: HelpDesk@govpay.gov , Phone: 703-964-8802 ,

17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN
- ☐ OFFER

18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED
- ☐ SEE ADDENDUM

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	(Use Reverse and/or Attach Additional Sheets as Necessary)				

25. ACCOUNTING AND APPROPRIATION DATA

26. TOTAL AWARD AMOUNT (For Govt. Use Only)

- ☑ 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4. FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA ☑ ARE ☐ ARE NOT ATTACHED
- ☐ 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA ☐ ARE ☐ ARE NOT ATTACHED

28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN ____ COPIES
- ☐ TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.

29. AWARD OF CONTRACT: REF. ____ OFFER
- ☐ DATED ____. YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:

30a. SIGNATURE OF OFFEROR/CONTRACTOR

31a. UNITED STATES OF AMERICA *(SIGNATURE OF CONTRACTING OFFICER)*

30b. NAME AND TITLE OF SIGNER *(Type or print)*	30c. DATE SIGNED	31b. NAME OF CONTRACTING OFFICER *(Type or print)*	31c. DATE SIGNED
		David R. Mitchell	

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED ☐ INSPECTED ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE
	32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE

33. SHIP NUMBER	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR	36. PAYMENT	37. CHECK NUMBER
PARTIAL ☐ FINAL ☐			☐ COMPLETE ☐ PARTIAL ☐ FINAL	
38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY		

41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT	42a. RECEIVED BY *(Print)*
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER / 41c. DATE	42b. RECEIVED AT *(Location)*
	42c. DATE REC'D *(YY/MM/DD)* / 42d. TOTAL CONTAINERS

Line Item Number	Description	Delivery Date (Start Date to End Date)	Quantity	Unit of Issue	Unit Price	Total Cost (Includes Discounts)
0001	25K LOADER	5 mths. (ADC)	0.00		$	$

PLEASE SEE 25K LOADER SPECIFICATIONS

TABLE OF CONTENTS

COMMERCIAL CLAUSES

1 GOVPAY

GOVPAY ELECTRONIC INVOICING
All payment requests must be submitted electronically through GovPay. "Payment request" means any request for contract financing payment or invoice payment by a contractor. To constitute a proper invoice, the GovPay payment request must conform to the requirements identified in FAR 32.905(b), "Payment Documentation and Process" and FAR 52.232-25, "Prompt Payment (OCT 2008)". To ensure the timely processing of invoices GovPay uses an automated "workflow" process to route invoices for review, approvals and payment; as required by the "Prompt Payment Act".

Detailed GovPay information for use of GovPay may be obtained on the Internet at www.govpay.gov. This web site includes user manuals, training resources, instructions for registration and contact information for the GovPay help desk for additional support. All users can access reports on the status of their invoices.

Supporting documentation shall be attached to the GovPay invoice in the form of "flat files" in American Standard Code for Information Interchange (ASCII) and an Adobe PDF file. There is a 15MB limitation on file size for these attachments, per header or line item. Facsimile, e-mail, and scanned documents are NOT acceptable electronic forms for payment requests.

GovPay uses the contractor information in the Central Contractor Registration (CCR) database as one of the components for validating contractor registration. It is the responsibility of the contractor to submit accurate and current CCR information. Failure to register and maintain CCR information, or if it has expired, been suspended, been deleted, or could not be found, will result in rejection of your invoice. An invoice submitted during the period for which information in the CCR could not be verified must be resubmitted for payment after successfully registering or updating registration in CCR. Contractors are encouraged to review their CCR information to ensure the most current information is available for GovPay.

The CCR Assistance Center is available to provide assistance and answer questions. They can be reached at 1-888-227-2423 or on the web at http://www.ccr.gov.

[End of clause]

2 52.252-02 CLAUSES INCORPORATED BY REFERENCE

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

https://www.acquisition.gov/Far/

Clause	Title	Date
52.212-01	Instructions to Offerors--Commercial Items	June 2008

3 52.212-02 EVALUATION - COMMERCIAL ITEMS JANUARY 1999

(a) The Government will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the Government, price and other factors considered. The following factors shall be used to evaluate offers:

Lowest Price Technically Acceptable:

1. Ability to meet all required specifications
2. Delivery time frame
3. Contractors past performance

(b) Options. The Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. The Government may determine that an offer is unacceptable if the option prices are significantly unbalanced. Evaluation of options shall not obligate the Government to exercise the option(s).

(c) A written notice of award or acceptance of an offer, mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer, shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer (or part of an offer), whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award.

4 52.212-03 OFFEROR REPRESENTATIONS AND CERTIFICATIONS - COMMERCIAL ITEMS AUGUST 2009

An offeror shall complete only paragraph (b) of this provision if the offeror has completed the annual representations and certifications electronically at http://orca.bpn.gov. If an offeror has not completed the annual representations and certifications electronically at the ORCA website, the offeror shall complete only paragraphs (c) through (m) of this provision.

(a) Definitions. As used in this provision—

"Emerging small business" means a small business concern whose size is no greater than 50 percent of the numerical size standard for the NAICS code designated.

"Forced or indentured child labor" means all work or service—

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process or penalties.

"Inverted domestic corporation" means a foreign incorporated entity which is treated as an inverted domestic corporation under 6 U.S.C. 395(b), i.e., a corporation that used to be incorporated in the United States, or used to be a partnership in the United States, but now is incorporated in a foreign country, or is a subsidiary whose parent corporation is incorporated in a foreign country, that meets the criteria specified in 6 U.S.C. 395(b), applied in accordance with the rules and definitions of 6 U.S.C. 395(c).

"Manufactured end product" means any end product in Federal Supply Classes (FSC) 1000-9999, except—

(1) FSC 5510, Lumber and Related Basic Wood Materials;

(2) Federal Supply Group (FSG) 87, Agricultural Supplies;

(3) FSG 88, Live Animals;

(4) FSG 89, Food and Related Consumables;

(5) FSC 9410, Crude Grades of Plant Materials;

(6) FSC 9430, Miscellaneous Crude Animal Products, Inedible;

(7) FSC 9440, Miscellaneous Crude Agricultural and Forestry Products;

(8) FSC 9610, Ores;

(9) FSC 9620, Minerals, Natural and Synthetic; and

(10) FSC 9630, Additive Metal Materials.

"Place of manufacture" means the place where an end product is assembled out of components, or otherwise made or processed from raw materials into the finished product that is to be provided to the Government. If a product is disassembled and reassembled, the place of reassembly is not the place of manufacture.

"Restricted business operations" means business operations in Sudan that include power production activities, mineral extraction activities, oil-related activities, or the production of military equipment, as those terms are defined in the Sudan Accountability and Divestment Act of 2007 (Pub. L. 110-174). Restricted business operations do not include business operations that the person (as that term is defined in Section 2 of the Sudan Accountability and Divestment Act of 2007) conducting the business can demonstrate—

(1) Are conducted under contract directly and exclusively with the regional government of southern Sudan;

(2) Are conducted pursuant to specific authorization from the Office of Foreign Assets Control in the Department of the Treasury, or are expressly exempted under Federal law from the requirement to be conducted under such authorization;

(3) Consist of providing goods or services to marginalized populations of Sudan;

(4) Consist of providing goods or services to an internationally recognized peacekeeping force or humanitarian organization;

(5) Consist of providing goods or services that are used only to promote health or education; or

(6) Have been voluntarily suspended.

"Service-disabled veteran-owned small business concern"—

(1) Means a small business concern—

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and size standards in this solicitation.

"Veteran-owned small business concern" means a small business concern—

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned business concern" means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

"Women-owned small business concern" means a small business concern—

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(b)(1) Annual Representations and Certifications. Any changes provided by the offeror in paragraph (b)(2) of this provision do not automatically change the representations and certifications posted on the Online Representations and Certifications Application (ORCA) website.

(2) The offeror has completed the annual representations and certifications electronically via the ORCA website at http://orca.bpn.gov. After reviewing the ORCA database information, the offeror verifies by submission of this offer that the representations and certifications currently posted electronically at FAR 52.212-3, Offeror Representations and Certifications—Commercial Items, have been entered or updated in the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201), except for paragraphs _____.

[Offeror to identify the applicable paragraphs at (c) through (n) of this provision that the offeror has completed for the purposes of this solicitation only, if any.

These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.]

(c) Offerors must complete the following representations when the resulting contract will be performed in the United States or its outlying areas. Check all that apply.

(1) Small business concern. The offeror represents as part of its offer that it o is, o is not a small business concern.

(2) Veteran-owned small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that it o is, o is not a veteran-owned small business concern.

(3) Service-disabled veteran-owned small business concern. [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.] The offeror represents as part of its offer that it o is, o is not a service-disabled veteran-owned small business concern.

(4) Small disadvantaged business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, for general statistical purposes, that it o is, o is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(5) Women-owned small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it o is, o is not a women-owned small business concern.

Note: Complete paragraphs (c)(6) and (c)(7) only if this solicitation is expected to exceed the simplified acquisition threshold.

(6) Women-owned business concern (other than small business concern). [Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it o is a women-owned business concern.

(7) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of the contract price:_____

(8) Small Business Size for the Small Business Competitiveness Demonstration Program and for the Targeted Industry Categories under the Small Business Competitiveness Demonstration Program. [Complete only if the offeror has represented itself to be a small business concern under the size standards for this solicitation.]

(i) [Complete only for solicitations indicated in an addendum as being set-aside for emerging small businesses in one of the designated industry groups (DIGs).] The offeror represents as part of its offer that it o is, o is not an emerging small business.

(ii) [Complete only for solicitations indicated in an addendum as being for one of the targeted industry categories (TICs) or designated industry groups (DIGs).] Offeror represents as follows:

(A) Offeror's number of employees for the past 12 months (check the Employees column if size standard stated in the solicitation is expressed in terms of number of employees); or

(B) Offeror's average annual gross revenue for the last 3 fiscal years (check the Average Annual Gross Number of Revenues column if size standard stated in the solicitation is expressed in terms of annual receipts).

(Check one of the following):

Number of Employees	Average Annual Gross Revenues
__ 50 or fewer	__ $1 million or less
__ 51–100	__ $1,000,001–$2 million
__ 101–250	__ $2,000,001–$3.5 million
__ 251–500	__ $3,500,001–$5 million
__ 501–750	__ $5,000,001–$10 million
__ 751–1,000	__ $10,000,001–$17 million
__ Over 1,000	__ Over $17 million

(9) [Complete only if the solicitation contains the clause at FAR 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns, or FAR 52.219-25, Small Disadvantaged Business Participation Program—Disadvantaged Status and Reporting, and the offeror desires a benefit based on its disadvantaged status.]

(i) General. The offeror represents that either—

(A) It [ ] is, [ ] is not certified by the Small Business Administration as a small disadvantaged business concern and identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net), and that no material change in disadvantaged ownership and control has occurred since its certification, and, where the concern is owned by one or more individuals claiming disadvantaged status, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); or

(B) It [ ] has, [ ] has not submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(ii) [ ] Joint Ventures under the Price Evaluation Adjustment for Small Disadvantaged Business Concerns. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements in 13 CFR 124.1002(f) and that the representation in paragraph (c)(9)(i) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.]

(10) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, as part of its offer, that—

(i) It [ ] is, [ ] is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126; and

(ii) It [ ] is, [ ] is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (c)(10)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(d) Representations required to implement provisions of Executive Order 11246—

(1) Previous contracts and compliance. The offeror represents that—

(i) It [ ] has, [ ] has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation; and

(ii) It [ ] has, [ ] has not filed all required compliance reports.

(2) Affirmative Action Compliance. The offeror represents that—

(i) It [ ] has developed and has on file, [ ] has not developed and does not have on file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 cfr parts 60-1 and 60-2), or

(ii) It [ ] has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(e) Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352). (Applies only if the contract is expected to exceed $100,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with the award of any resultant contract. If any registrants under the Lobbying Disclosure Act of 1995 have made a lobbying contact on behalf of the offeror with respect to this contract, the offeror shall complete and submit, with its offer, OMB Standard Form LLL, Disclosure of Lobbying Activities, to provide the name of the registrants. The offeror need not report regularly employed officers or employees of the offeror to whom payments of reasonable compensation were made.

(f) Buy American Act Certificate. (Applies only if the clause at Federal Acquisition Regulation (FAR) 52.225-1, Buy American Act—Supplies, is included in this solicitation.)

(1) The offeror certifies that each end product, except those listed in paragraph (f)(2) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products, i.e., an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of "domestic end product." The terms "commercially available off-the-shelf (COTS) item" "component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act–Supplies."

(2) Foreign End Products:

Line Item No.	Country of Origin
_____	_____
_____	_____
_____	_____

[List as necessary]

(3) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(g)(1) Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate. (Applies only if the clause at FAR 52.225-3, Buy American Act—Free Trade Agreements—Israeli Trade Act, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(1)(ii) or (g)(1)(iii) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined,

produced, or manufactured outside the United States. The terms "Bahrainian, Moroccan, Omani, or Peruvian end product," "commercially available off-the-shelf (COTS) item," "component," "domestic end product," "end product,""foreign end product," "Free Trade Agreement country,""Free Trade Agreement country end product," "Israeli end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act–Free Trade Agreements- Israeli Trade Act."

(ii) The offeror certifies that the following supplies are Free Trade Agreement country end products (other than Bahrainian, Moroccan, Omani, or Peruvian end products) or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act":

Free Trade Agreement Country End Products (Other than Bahrainian, Moroccan, Omani, or Peruvian End Products) or Israeli End Products:

Line Item No.	Country of Origin
_____	_____
_____	_____
_____	_____

[List as necessary]

(iii) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g)(1)(ii) of this provision) as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act." The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products, i.e., an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of "domestic end product."

Other Foreign End Products:

Line Item No.	Country of Origin
_____	_____
_____	_____
_____	_____

[List as necessary]

(iv) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(2) Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate, Alternate I. If Alternate I to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act":

Canadian End Products:

Line Item No.
_____
_____
_____

[List as necessary]

(3) Buy American Act—Free Trade Agreements—Israeli Trade Act Certificate, Alternate II. If Alternate II to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act—Free Trade Agreements—Israeli Trade Act":

Canadian or Israeli End Products:

Line Item No.	Country of Origin
_____	_____
_____	_____

_____ _____

[List as necessary]

(4) Trade Agreements Certificate. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(4)(ii) of this provision, is a U.S.-made or designated country end product, as defined in the clause of this solicitation entitled "Trade Agreements."

(ii) The offeror shall list as other end products those end products that are not U.S.-made or designated country end products.

Other End Products:

Line Item No.	Country of Origin
_____	_____
_____	_____
_____	_____

[List as necessary]

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items covered by the WTO GPA, the Government will evaluate offers of U.S.-made or designated country end products without regard to the restrictions of the Buy American Act. The Government will consider for award only offers of U.S.-made or designated country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) Certification Regarding Responsibility Matters (Executive Order 12689). (Applies only if the contract value is expected to exceed the simplified acquisition threshold.) The offeror certifies, to the best of its knowledge and belief, that the offeror and/or any of its principals—

(1) [ ] Are, [ ] are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(2) [ ] Have, [ ] have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property;

(3) [ ] Are, [ ] are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses enumerated in paragraph (h)(2) of this clause; and

(4) [ ] Have, [ ] have not, within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds $3,000 for which the liability remains unsatisfied.

(i) Taxes are considered delinquent if both of the following criteria apply:

(A) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(B) The taxpayer is delinquent in making payment. A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(ii) Examples.

(A) The taxpayer has received a statutory notice of deficiency, under I.R.C. §6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(B) The IRS has filed a notice of Federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. §6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek tax court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(C) The taxpayer has entered into an installment agreement pursuant to I.R.C. §6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(D) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. §362 (the Bankruptcy Code).

(i) Certification Regarding Knowledge of Child Labor for Listed End Products (Executive Order 13126). [The Contracting Officer must list in paragraph (i)(1) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at 22.1503(b).]

(1) Listed end products.

Listed End Product	Listed Countries of Origin
_____	_____
_____	_____

(2) Certification. [If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.]

[ ] (i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

[ ] (ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(j) Place of manufacture. (Does not apply unless the solicitation is predominantly for the acquisition of manufactured end products.) For statistical purposes only, the offeror shall indicate whether the place of manufacture of the end products it expects to provide in response to this solicitation is predominantly—

(1) [ ] In the United States (Check this box if the total anticipated price of offered end products manufactured in the United States exceeds the total anticipated price of offered end products manufactured outside the United States); or

(2) [ ] Outside the United States.

(k) Certificates regarding exemptions from the application of the Service Contract Act. (Certification by the offeror as to its compliance with respect to the contract also constitutes its certification as to compliance by its subcontractor if it subcontracts out the exempt services.) [The contracting officer is to check a box to indicate if paragraph (k)(1) or (k)(2) applies.]

[ ] (1) Maintenance, calibration, or repair of certain equipment as described in FAR 22.1003-4(c)(1). The offeror o does o does not certify that—

(i) The items of equipment to be serviced under this contract are used regularly for other than Governmental purposes and are sold or traded by the offeror (or subcontractor in the case of an exempt subcontract) in substantial quantities to the general public in the course of normal business operations;

(ii) The services will be furnished at prices which are, or are based on, established catalog or market prices (see FAR 22.1003-4(c)(2)(ii)) for the maintenance, calibration, or repair of such equipment; and

(iii) The compensation (wage and fringe benefits) plan for all service employees performing work under the contract will be the same as that used for these employees and equivalent employees servicing the same equipment of commercial customers.

[ ] (2) Certain services as described in FAR 22.1003-4(d)(1). The offeror [ ] does [ ] does not certify that—

(i) The services under the contract are offered and sold regularly to non-Governmental customers, and are provided by the offeror (or subcontractor in the case of an exempt subcontract) to the general public in substantial quantities in the course of normal business operations;

(ii) The contract services will be furnished at prices that are, or are based on, established catalog or market prices (see FAR 22.1003-4(d)(2)(iii));

(iii) Each service employee who will perform the services under the contract will spend only a small portion of his or her time (a monthly average of less than 20 percent of the available hours on an annualized basis, or less than 20 percent of available hours during the contract period if the contract period is less than a month) servicing the Government contract; and

(iv) The compensation (wage and fringe benefits) plan for all service employees performing work under the contract is the same as that used for these employees and equivalent employees servicing commercial customers.

(3) If paragraph (k)(1) or (k)(2) of this clause applies—

(i) If the offeror does not certify to the conditions in paragraph (k)(1) or (k)(2) and the Contracting Officer did not attach a Service Contract Act wage determination to the solicitation, the offeror shall notify the Contracting Officer as soon as possible; and

(ii) The Contracting Officer may not make an award to the offeror if the offeror fails to execute the certification in paragraph (k)(1) or (k)(2) of this clause or to contact the Contracting Officer as required in paragraph (k)(3)(i) of this clause.

(l) Taxpayer Identification Number (TIN) (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to a central contractor registration database to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (l)(3) through (l)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) Taxpayer Identification Number (TIN).

[ ] TIN: _____.

[ ] TIN has been applied for.

[ ] TIN is not required because:

[ ] Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

[ ] Offeror is an agency or instrumentality of a foreign government;

[ ] Offeror is an agency or instrumentality of the Federal Government.

(4) Type of organization.

[ ] Sole proprietorship;

[ ] Partnership;

[ ] Corporate entity (not tax-exempt);

[ ] Corporate entity (tax-exempt);

[ ] Government entity (Federal, State, or local);

[ ] Foreign government;

[ ] International organization per 26 CFR 1.6049-4;

[ ] Other _____.

(5) Common parent.

[ ] Offeror is not owned or controlled by a common parent;

[ ] Name and TIN of common parent:

Name _____.
TIN _____.

(m) Restricted business operations in Sudan. By submission of its offer, the offeror certifies that the offeror does not conduct any restricted business operations in Sudan.

(n) Prohibition on Contracting with Inverted Domestic Corporations.(1) Relation to Internal Revenue Code. A foreign entity that is treated as an inverted domestic corporation for purposes of the Internal Revenue Code at 26 U.S.C. 7874 (or would be except that the inversion transactions were completed on or before March 4, 2003), is also an inverted domestic corporation for purposes of 6 U.S.C. 395 and for this solicitation provision (see FAR 9.108).

(2) Representation. By submission of its offer, the offeror represents that it is not an inverted domestic corporation and is not a subsidiary of one.

(End of provision)

5 52.252-02 CLAUSES INCORPORATED BY REFERENCE

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

https://www.acquisition.gov/Far/

Clause	Title	Date
52.212-04	Contract Terms and Conditions--Commercial Items	March 2009

6 52.212-05 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS--COMMERCIAL ITEMS APRIL 2010

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses, which are incorporated in this contract by reference, to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

(1) 52.222-50, Combating Trafficking in Persons (FEB 2009) (22 U.S.C. 7104(g)).
___Alternate I (AUG 2007) of 52.222-50 (22 U.S.C. 7104(g)).
(2) 52.233-03, Protest After Award (AUG 1996) (31 U.S.C. 3553).
(3) 52.233-04, Applicable Law for Breach of Contract Claim (OCT 2004) (Pub. L. 108-77, 108-78)

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

[Contracting Officer shall check as appropriate.]

X (1) 52.203-06, Restrictions on Subcontractor Sales to the Government (Sept 2006), with Alternate I (Oct 1995) (41 U.S.C. 253g and 10 U.S.C. 2402).

___ (2) 52.203-13, Contractor Code of Business Ethics and Conduct (APR 2010) (Pub. L. 110-252, Title VI, Chapter 1 (41 U.S.C. 251 note)).

___(3) 52.203-15, Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (MAR 2009) (Section 1553 of Pub. L. 111-5). (Applies to contracts funded by the American Recovery and Reinvestment Act of 2009.)

___(4) 52.204-11, American Recovery and Reinvestment Act—Reporting Requirements (MAR 2009) (Pub. L. 111-5).

___ (5) 52.219-03, Notice of Total HUBZone Small Business Set-Aside (Jan 1999) (15 U.S.C 657a).

___ (6) 52.219-04, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JULY 2005) (if the offeror elects to waive the preference, it shall so indicate in its offer) (15 U.S.C 657a).

___ (7) [Reserved]

___ (8)(i) 52.219-06, Notice of Total Small Business Set-Aside (June 2003) (15 U.S.C. 644).

___ (ii) Alternate I (Oct 1995) of 52.219-6.

___ (iii) Alternate II (Mar 2004) of 52.219-6.

___ (9)(i) 52.219-07 Notice of Partial Small Business Set-Aside (June 2003) (15 U.S.C. 644).

___ (ii) Alternate I (Oct 1995) of 52.219-7.

___ (iii) Alternate II (Mar 2004) of 52.219-7.

X (10) 52.219-08, Utilization of Small Business Concerns (May 2004) (15 U.S.C. 637 (d)(2) and (3)).

X (11(i) 52.219-09, Small Business Subcontracting Plan (APR 2008) (15 U.S.C. 637(d)(4)).

___ (ii) Alternate I (Oct 2001) of 52.219-9.

___ (iii) Alternate II (Oct 2001) of 52.219-9.

___ (12) 52.219-14, Limitations on Subcontracting (Dec 1996) (15 U.S.C. 637(a)(14)).

___ (13) 52.219-16, Liquidated Damages—Subcontracting Plan (JAN 1999) (15 U.S.C. 637(d)(4)(F)(i)).

___ (14)(i) 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns (OCT 2008) (10 U.S.C. 2323) (if the offeror elects to waive the adjustment, it shall so indicate in its offer).

___ (ii) Alternate I (June 2003) of 52.219-23.

___ (15) 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (APR 2008) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).

___ (16) 52.219-26, Small Disadvantaged Business Participation Program--Incentive Subcontracting (Oct 2000) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).

___ (17) 52.219-27, Notice of Total Service-Disabled Veteran-Owned Small Business Set-Aside (May 2004) (15 U.S.C. 657 f).

X (18) 52.219-28, Post Award Small Business Program Rerepresentation (APR 2009) (15 U.S.C. 632(a)(2)).

X (19) 52.222-03, Convict Labor (June 2003) (E.O. 11755).

X (20) 52.222-19, Child Labor-Cooperation with Authorities and Remedies (AUG 2009) (E.O. 13126).

X (21) 52.222-21, Prohibition of Segregated Facilities (Feb 1999).

X (22) 52.222-26, Equal Opportunity (MAR 2007) (E.O. 11246).

X (23) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (SEPT 2006) (38 U.S.C. 4212).

X (24) 52.222-36, Affirmative Action for Workers with Disabilities (Jun 1998) (29 U.S.C. 793).

X (25) 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (SEPT 2006) (38 U.S.C. 4212).

___ (26) 52.222-54, Employment Eligibility Verification (JAN 2009). (Executive Order 12989). (Not applicable to the acquisition of commercially available off-the-shelf items or certain other types of commercial items as prescribed in 22.1803.)

___ (27)(i) 52.223-09, Estimate of Percentage of Recovered Material Content for EPA-Designated Items (MAY 2008) (42 U.S.C. 6962(c)(3)(A)(ii)).

___ (ii) Alternate I (MAY 2008) of 52.223-09 (42 U.S.C. 6962(i)(2)(C)).

___ (28) 52.223-15, Energy Efficiency in Energy-Consuming Products (DEC 2007) (42 U.S.C. 8259b).

___(29)(i) 52.223-16, IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products (DEC 2007) (E.O. 13423).

___(ii) Alternate I (DEC 2007) of 52.223-16.

X (30) 52.225-01, Buy American Act—Supplies (Feb 2009) (41 U.S.C. 10a-10d).

___ (31)(i)52.225-03, Buy American Act—Free Trade Agreements—Israeli Trade Act (JUNE 2009) (41 U.S.C. 10a-10d, 19 U.S.C. 3301 note, 19 U.S.C. 2112 note, 19 U.S.C. 3805 note, Pub. L. 108-77, 108-78, 108-286, 108-302, 109-53, 109-169, 109-283, and 110-138.

___ (ii) Alternate I (Jan 2004) of 52.225-3.

___ (iii) Alternate II (Jan 2004) of 52.225-3.

___ (32) 52.225-05, Trade Agreements (AUG 2009) (19 U.S.C. 2501, et seq., 19 U.S.C. 3301 note).

X (33) 52.225-13, Restrictions on Certain Foreign Purchases (JUNE 2008) (E.O's, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).

___ (34) 52.226-04, Notice of Disaster or Emergency Area Set-Aside (NOV 2007) (42 U.S.C. 5150).

___ (35) 52.226-05, Restrictions on Subcontracting Outside Disaster or Emergency Area (NOV 2007) (42 U.S.C. 5150).

___ (36) 52.232-29, Terms for Financing of Purchases of Commercial Items (Feb 2002) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).

___ (37) 52.232-30, Installment Payments for Commercial Items (Oct 1995) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).

X (38) 52.232-33, Payment by Electronic Funds Transfer-Central Contractor Registration (Oct 2003) (31 U.S.C. 3332).

___ (39) 52.232-34, Payment by Electronic Funds Transfer-Other than Central Contractor Registration (May 1999) (31 U.S.C. 3332).

___ (40) 52.232-36, Payment by Third Party (FEB 2010) (31 U.S.C. 3332).

___ (41) 52.239-01, Privacy or Security Safeguards (Aug 1996) (5 U.S.C. 552a).

___ (42)(i) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) (46 U.S.C. Appx 1241(b) and 10 U.S.C. 2631).

___ (ii) Alternate I (Apr 2003) of 52.247-64.

(c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

[Contracting Officer check as appropriate.]

___ (1) 52.222-41, Service Contract Act of 1965 (NOV 2007) (41 U.S.C. 351, et seq.).

___ (2) 52.222-42, Statement of Equivalent Rates for Federal Hires (May 1989) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

___ (3) 52.222-43, Fair Labor Standards Act and Service Contract Act--Price Adjustment (Multiple Year and Option Contracts) (SEP 2009) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

___ (4) 52.222-44, Fair Labor Standards Act and Service Contract Act--Price Adjustment (SEP 2009) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).

___ (5) 52.222-51, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment—Requirements (NOV 2007) (41 U.S.C. 351, et seq.).

___ (6) 52.222-53, Exemption from Application of the Service Contract Act to Contracts for Certain Services— Requirements (FEB 2009) (41 U.S.C. 351, et seq.).

___ (7) 52.226-06, Promoting Excess Food Donation to Nonprofit Organizations (MAR 2009) (Pub. L. 110-247).

___ (8) 52.237-11, Accepting and Dispensing of $1 Coin (SEPT 2008) (31 U.S.C. 5112(p)(1)).

(d) Comptroller General Examination of Record. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at 52.215-2, Audit and Records--Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e)(1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c) and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in paragraphs (e)(1) in a subcontract for commercial items. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause--

(i) 52.203-13, Contractor Code of Business Ethics and Conduct (APR 2010) (Pub. L. 110-252, Title VI, Chapter 1 (41 U.S.C. 251 note)).

(ii) 52.219-08, Utilization of Small Business Concerns (May 2004) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds $550,000 ($1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(iii) [Reserved]

(iv) 52.222-26, Equal Opportunity (MAR 2007) (E.O. 11246).

(v) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (SEPT 2006) (38 U.S.C. 4212).

(vi) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).

(vii) [Reserved]

(viii) 52.222-41, Service Contract Act of 1965 (NOV 2007)(41 U.S.C. 351, et seq.).

(ix) 52.222-50, Combating Trafficking in Persons (FEB 2009) (22 U.S.C. 7104(g)).

___Alternate I (AUG 2007) of 52.222-50 (22 U.S.C. 7104(g)).

(x) 52.222-51, Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment-Requirements (NOV 2007) (41 U.S.C. 351, et seq.).

(xi) 52.222-53, Exemption from Application of the Service Contract Act to Contracts for Certain Services-Requirements (FEB 2009) (41 U.S.C. 351, et seq.).

(xii) 52.222-54, Employment Eligibility Verification (JAN 2009)

(xiii) 52.226-06, Promoting Excess Food Donation to Nonprofit Organizations (MAR 2009) (Pub. L. 110-247). Flow down required in accordance with paragraph (e) of FAR clause 52.226-06.

(xiv) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) (46 U.S.C. Appx. 1241(b) and 10 U.S.C. 2631). Flow down required in accordance with paragraph (d) of FAR clause 52.247-64.

(2) While not required, the contractor may include in its subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(End of Clause)

7 1410.004 BRAND NAME OR EQUAL

1410.004-70 Solicitation requirements for brand name products or equal

(a) "Brand name or equal" purchase descriptions in solicitations shall contain the following information:

Identification of the item by generic descriptions;
Make, model number, catalog designation (or other description), and identification of commercial catalog where it is listed; and
Name of manufacturer, producer, or distributor of the item and complete address.
(b) All characteristics of the product which the office initiating the purchase determines to be essential to the Government's minimum needs shall be separately identified under the heading of "salient characteristics" and included in the purchase description contained in the solicitation. The Product/Line Description is identified in Electronic Commerce transaction sets 840 (RFQ) and 843 (Response to RFQ).

(c) The solicitation must be clear as to the information offerors must submit when offering "equal" products for evaluation. The following statement shall be included at the end of each "brand name or equal" description in a solicitation for an offeror to identify its "equal" product:

"Offerors proposing to furnish an "equal" product, in accordance with the "Brand Name or Equal" provision of this solicitation, shall insert the following description for the product.

Product Name:
Manufacturer's Name:
Address:
Product make, model, or catalog description:

Offerors shall also be responsible for submitting all additional information on the above product necessary for the Government to determine whether the product offered meets the salient characteristics of the "brand name" as listed in the solicitation."

(d) In addition, the provision at 1452.210-70, Brand Name or Equal - Department of the Interior, shall be inserted by the CO in solicitations where a "brand name or equal" purchase description is used.

(e) If the CO determines that the product has no material effect on the acceptability of a deliverable end item in a bid or proposal, the CO shall use Alternate I to the provision at DIAR 1452.210-70.

8 25K LOADER SPECIFICATIONS

PRIME ITEM DEVELOPMENT SPECIFICATION (PIDS)
Halvorsen Loader
FMC ENG SPC 002
REV 007

TRUCK, TRANSPORTER/LOADER,
AIRCRAFT CARGO,
25,000 POUNDS CAPACITY

FSC 3930

Record of Revisions

Revision No.	Date	Changes	Authorization
001	07 May 2001	3.3.6 – Electrical System and Lighting	ECP-002
		3.4 – Government Furnished Property	ECP-002
		3.9.5 – General	
		3.9.7.1 – Nameplates or Product Markings	ECP-001A
002	11 Jan 02	3.3.4.4 Restraint Provisions	ECP-004
		3.3.6 Electrical System and Lighting	ECP-004
		3.3.5 Cab	ECP-004
		3.5.3 Cargo Operations	ECP-004
		3.8 Transportability	ECP-004
003	19 Jul 02	3.8 Transportability	ECP-006
004	04 Dec 02	3.6.2. Maintainability	ECP-007
		3.7 Environmental Conditions	Admin change only
		3.9.3 Protective Coatings	ECP-007
005	02 Jul 2003	3.6.1 Mean Time Between Failure(MTBF)	CCP-015b
006	15 Sep 03	3.3.7 Hydraulic System, addition of HANC	ECP 008
		3.9.7.1 General. Added red stripe on pallet stops	ECP 008
007	29 Sep 05	General: Replaced "NGSL" with "Halvorsen Loader"	ECP-010
		General: Removed "per ECP" from various text paragraphs	Admin change only
		2.3 Order of Precedence	Admin change only
		3.3.5 Cab: Added requirement for Cab Cooling	ECP009
		3.3.6 Electrical System and Lighting	ECP-010
		3.4 Government Furnished Property	Admin change only
		3.6 Reliability and Maintainability	Admin change only
		3.6.2 Maintainability: Added requirement for Auto Lube	ECP-009
		3.9.4 Electromagnetic Radiation	ECP-009
		3.9.5 Nameplates and Products Marking	ECP-010
		Table 2 – 3.4 Government Furnished Property	Admin change only

FMC CORPORATION
7300 Presidents Drive
Orlando, FL 32809

Table 1 System Requirements Document (SRD) to PIDS CROSS-REFERENCE MATRIX

SRD to PIDS Cross-reference Matrix		
SRD	Paragraph Title	PIDS
1	Scope	1
1.1	Scope	1.1
2	Applicable Documents	2
2.1	Government Documents	2.1
2.1.1	Specifications, standards, and handbooks	2.1.1
2.1.2	Other Government documents, drawings, publications	2.1.2
2.2	Non-Government publications	2.2
2.3	Order of precedence	2.3
3	Requirements	3
3.1	Missions	3.1
3.1.1	Aircraft Interface	3.1.1
3.1.2	Ground Equipment Interface	3.1.2
3.2	Threat	3.2
NA	Government Furnished Property	3.4
3.3	Required Function Operations	3.5
3.3.1	Travel Operations	3.5.1
3.3.2	Deck Operations	3.5.2
3.3.3	Cargo Operations	3.5.3
3.3.4	Towing Operations	3.5.4
3.4	Halvorsen Loader System Requirements.	3.3
3.4.1	Powertrain	3.3.1
3.4.2	Steering System	3.3.2
3.4.3	Brake system	3.3.3
3.4.4	Deck and Lift System	3.3.4
3.4.4.1	Lift system	3.3.4.1
3.4.4.2	Guide Rails and Pallet Locks	3.3.4.2
3.4.4.3	Emergency Pallet Stops	3.3.4.3
3.4.4.4	Restraint Provisions	3.3.4.4
3.4.4.5	Bridge Plates	3.3.4.5
3.4.4.6	Powered Conveyor System	3.3.4.6
3.4.4.7	Ladder, Catwalks, and Handrails	3.3.4.7
3.4.4.8	Storage Compartment	3.3.4.8
3.4.5	Cab	3.3.5
3.4.5.1	Instrument and Controls Operation	3.3.5.1
3.4.6	Electrical System and Lighting	3.3.6
3.4.7	Hydraulic System	3.3.7
3.5	Environmental conditions	3.7
3.6	Transportability	3.8
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1 SCOPE

1.1 Scope.

This specification covers one type of self-propelled, air transportable (C-130, C-141, C-17, and C-5), 25,000 pound capacity aircraft loading and unloading vehicle, hereafter referred to as the Halvorsen Loader.

2 APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, Standards, and Handbooks.

The following standards of the exact revision listed below form a part of this specification to the extent specified herein.

STANDARDS:

Military

MIL-STA-209J Interface Standards for Lifting and Tie Down Provisions

MIL-STD-46 I D Requirements for the Control of Electromagnetic Emissions and Susceptibility

MIL-STD-462D Measurement of Electromagnetic Interference Characteristics

MIL-STD-882D System Safety

Federal

FED-STD-595 Colors

2.1.2 Other Government documents, drawings, and publications.

The following other Government documents and publications of the exact revision level shown form a part of this document to the extent specified herein:

Technical Orders

TO-00-35D-54	SAF Deficiency Reporting and Investigating System
TO-36A-1-112	Depot Overhaul of USAF Vehicles Manuals

Manuals

AFMAN 24-307	Procedures for Vehicle Maintenance Management
AFMAN 91-201	Explosives Safety Standards
AFMAN 36-2108	Airman Classification Handbooks

Handbooks

MIL-HDBK-1791	Designing for Internal Aerial Delivery in Fixed Wing Aircraft
MIL-HDGK-781	Reliability Test Methods, Plans, and Environments for Qualification and Production Instructions

Instructions

AFI 24-302	Vehicle Maintenance Management

Drawings

8935894	Bridge Assembly, Load/Unload

CALIFORNIA AIR RESOURCES BOARD (CARB)

Off Road (Non-Highway) Engines

CODE OF FEDERAL REGULATIONS (CFR)

FMVSS 105; Title 49, Part 571.105Federal Motor Vehicle Safety Standards (FMVSS) – Hydraulic Brakes

Hazardous Material Regulation Subpart F of Title 49, Part 172

OSHA Regulations Subpart G of Title 29, Standard 1910.95, Occupational Noise Exposure

ENVIRONMENTAL PROTECTION AGENCY (EPA)

Off Road (Non-Highway) Engines

SYSTEM REQUIREMENTS DOCUMENT (SRD), ASC/SMG, REV 001, 10 FEB 2000

2.2 **Non-Government publications**
The following documents of the exact revision listed below form a part of this document to the extent specified herein.

NATIONAL AEROSPACE STANDARDS

NAS-411

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 407	Standard for Aircraft Fuel Servicing

AMERICAN WELDING SOCIETY

AWS D1.1-98	Structural Welding Code-Steels
AWS D1.1.2-98	Structural Welding Code-Aluminum
AWS B2.1	Welding Qualifications

RELIABILITY ANALYSIS CENTER (RAC)

CPE	Reliability Toolkit: Commercial Practices Edition

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

ARP 1247C	General Requirements for Aerospace Ground Support Equipment Motorized and Non-Motorized

ARP 1328	Aircraft Ground Support Equipment Vehicle Stability Analysis
ARP 1330	Welding of Structures for Ground Support Equipment
J336a	Sound Level for Truck Cab Interior
J366b	Exterior Sound Level for Heavy Trucks and Buses
Z26.1	Safety Glazing Materials for Glazing Motor Vehicles for Operating on and highways

FMC DOCUMENTS

FMC Certification Plan, Rev H, 14 Aug 98; International Standards Organization (ISO) 9001.

INTERNATIONAL STANDARDS ORGANIZATION (ISO)

International Standards Organization (ISO) 2691; Guide for the Evaluation of Human Exposure to Whole-Body Vibration

2.3 Reserved

3 REQUIREMENTS

3.1 Missions

The Halvorsen Loader mission is defined as effective, efficient, and safe transfer and transport of aerial port cargo weighing up to 25,000 pounds from a loading dock or from another piece of material handling equipment (MHE) onto an aircraft, and vice versa. Cargo includes pallets, platforms, containers and rolling stock. The Halvorsen Loader mission also includes transport by air, land, and sea.

3.1.1 Aircraft Interface

The Halvorsen Loader shall be built in accordance with NFPA 407 for concurrent servicing during aircraft fueling operations. It shall provide forward and rearward interface with all cargo doors of C-5, C-17, C-130, C-141, C-160, KC-10, C/KC-135 aircraft. It shall provide forward interface with all cargo doors (main deck and lower lobe) of DC-8, DC-9, DC10, MD-11, B-707, B-727, B-737, B-747, B-757, B-767, Airbus 300 Series, L-100, L-188, and L-1011 aircraft. A clearance of at least 4.0 inches shall be maintained between the Halvorsen Loader and the aircraft at all times. For aircraft equipped with guide rails, the Halvorsen Loader guide rails shall be aligned with the aircraft guide rails during interface. When interfacing with C-5 and C-17 aircraft, the Halvorsen Loader shall be able to align the left guide rail with the left-most aircraft guide rail and the right guide rail with the right-most aircraft guide rail (but not simultaneously).

3.1.2 Ground Equipment Interface

The Halvorsen Loader shall interface with K-loaders, commercial semi-trailers (excluding lowboys), and 463L 10K standard and adverse terrain forklifts. (See paragraph 3.5.3)

3.2 Threat

The major threats to the Halvorsen Loader are vandalism, terrorism, and sabotage.

3.3 Halvorsen Loader Systems Requirements

Except as otherwise specified herein, the Halvorsen Loader shall be designed and manufactured to best commercial practices using SAE ARP1247C as a guide.

3.3.1 Powertrain

The engine shall be certified by its manufacturer to be suitable for this application and not be damaged when operated on all grades of diesel fuels and grades JP-5 and JP-8 turbine fuels without additives. Fuel additives are acceptable for cold weather/ arctic condition except for gasoline and lubricating oil. It shall

comply with all applicable Environmental Protection Agency (EPA) and California Air Resources Board (CARB) regulations for off-road and non-highway use engines. The fuel tank filler shall allow refueling directly from fuel trucks and be accessible with the deck in any elevation.

3.3.2 Steering System

The steering system shall allow the operator to retain vehicle control and perform a lane change in the event of steering power source failure. The steering system shall provide for vehicle control in the air transport configuration to effect aircraft on/off loading.

3.3.3 Brake System

The service brakes shall be in general accordance with FMVSS 105 (for hydraulic brakes) with a stopping distance for the Halvorsen Loader at its GVWR at 25 feet from 15 mph on level dry pavement (this requirement does not include reaction time). The brake system shall allow the operator to retain vehicle control in the event of brake power source failure. The Halvorsen Loader shall be equipped with parking brake capable of holding the Halvorsen Loader at its GVWR on a 11.5° incline when headed either up or down.

3.3.4 Deck and Lift System

The deck shall not be totally supported by the lift system during normal transport operations to the flightline from the loading area and vice versa. At reduced speeds of less than 5 mph the deck with the maximum load conditions in paragraph 3.5.3 may be raised or lowered, to facilitate cargo handling operations.

3.3.4.1 Lift System

The lift system shall maintain safe control of the deck, with cargo (as listed in paragraph 3.5.3), in the event of electrical or hydraulic system failure. Hydraulic systems shall include pressure relief valves and regulators to prevent overpressure. Lift system drift rate shall not exceed 0.5 inch per hour, with/without engine running. The lift system shall be configured to prevent overtravel in all directions of the lift control. The lift system shall provide for uniformly controlled motions.

3.3.4.2 Guide Rails and Pallet Locks

Guide rails and pallet locks shall be provided to restrain HCU-6/E pallets loaded in the 108-inch wide dimension and the 88-inch wide dimension and Type V airdrop platforms. Rail/lock combination shall provide restraint in the longitudinal, lateral, and vertical directions in accordance with structural requirements of 3.9.7.1. The loader shall have the capability to engage two pallet locks on each side of each pallet during transport. Guide rails may be removed or relocated. The locks shall be one hand operable and foot engagable. The guide rails and locks shall be removable, relocatable and operable by personnel wearing cold weather/arctic clothing or chemical warfare gear.

3.3.4.3 Emergency Pallet Stops

Front and rear emergency pallet stops shall be provided. The pallet stops shall be capable of stopping, without deformation of the pallet stop or mechanism, a maximum weight pallet/ platform load being moved by the powered roller conveyor system or pushed by the loading crew. The pallet stop shall continue to operate properly after withstanding impact from a loose maximum weight pallet traveling the length of the Halvorsen Loader deck during maximum braking panic stop at 15 mph, or rolled down the K-loader deck inclined at maximum pitch capability. The Halvorsen Loader shall be capable of in-cab independent operation of emergency pallet stops. Appropriate safety precautions to the controls shall be applied to prevent inadvertent operation. The cab will have an indicator light that illuminates (see paragraph 3.9.7.1) when the emergency pallet stops are in the deployed position.

3.3.4.4 Restraint Provisions

Thirty-six (36) restraint provisions shall be provided (compatible with MB-1 chain tensioners, MB-1 chains and CGU-1/B straps), 10 on the guide rails (5 each side) and 20 distributed over the deck (outside or between guide rails) including 6 on the forward part of the deck to provide cargo restraint in all directions. The restraint provisions shall have a static safety factor of 3.0 at minimum yield strength and shall be on an evenly spaced grid pattern over the deck.

3.3.4.5 Bridge Plates

The Halvorsen Loader shall have the capability of interfacing with all the bridge plates of USAF loaders similar to Bridge Plate Assembly Drawing 8935895. Storage shall be on the handrail using the existing hook on the back of the bridge plate.

3.3.4.6 Powered Conveyor System

As a minimum an in-cab controlled powered conveyor system shall convey and brake any pallet, platform, or container load specified in paragraph 3.5.3 individually, combination thereof and/or simultaneously the, entire deck length. The powered conveyor system shall provide for a variable speed conveyor system with speeds up to 90 fpm. It shall operate simultaneously without interference to other single deck function(s) and allow manual cargo transfer.

3.3.4.7 Ladder, Catwalks, and Handrails

A semi-permanently mounted, telescoping, rigid construction ladder shall allow access from the ground to the cab and deck at any attitude and elevation. Ladder shall be removable for air transport. Catwalks/ walkdecks and handrails shall be provided on both sides for the entire deck length. The cab location will have a telescoping handrail only. Handrails shall be removable and interchangeable right to left and left to right on the Halvorsen Loader (except in the cab, ladder, and side loading areas) and between loaders.

3.3.4.8 Storage Provisions

Covered, partitioned compartments shall be provided, to store and provide ready accessibility for 10 MB-1 chain tensioners, 10 MB-1 chains and 10 CGU-1/B straps from the elevated deck. The storage compartment shall not accumulate fluids in the event the compartment cover is not closed nor shall the compartments door latches accumulate fluids. The storage compartment latch handles shall not accumulate fluids and shall be operable by personnel wearing cold weather/ arctic clothing or chemical warfare gear.

3.3.5 Cab

The Halvorsen Loader shall be equipped with a fully enclosed cab. The cab shall ensure operator safety and provide comfort and convenience to the operator. The seat shall be padded and cab spring assisted to aid the operator during the rigors of operation, which could extend past three (3) hours in duration. Visibility shall allow safe operation on roadways, flight lines, and in close proximity to aircraft; adequate visibility by the forward facing seated operator of the area behind the Halvorsen Loader, above the cab, and deck area shall be provided. Windows with opening capability and windshield shall be in accordance with SAE Z26. 1, Type AS1 and AS2 (windows only). A windshield wiper and washer system shall be provided to clear the windshield and rear window surfaces of dirt, rain, sleet, and snow so as not to impede vehicle mission performance. The defroster shall provide and maintain clear visibility for the operator in all weather environments. A variable temperature controlled heater shall be provided. A variable speed, directionally adjustable fan shall be provided for warm weather operations. The cab shall include double sliding windows and a vent to provide air circulation near the floor. The cab windows (excluding the windshield) shall have solar tinting. The cab shall be equipped with a variable temperature controlled R-134 vapor compression air cooling system to provide comfort to the operator. . The Halvorsen Loader shall be equipped as a minimum with:

- Speedometer
- Tachometer
- Hourmeter
- Oil pressure gauge
- Coolant and hydraulic system temperature gauges
- Voltmeter
- Fuel gauge
- Back-up power indicator

- Parking brake indicator
- AutoLube System Error Indicator

Back-up warning alarm is not required. Hand restraints shall be provided to aid in the safe access from the cab to the deck. An emergency exit shall be provided to allow egress during all operations, including interface inside aircraft petal doors. Stowage provision(s) for a portable land mobile radio in carrying case (2" x 4" x 7") and vehicle inspection guide and other forms (8 ½ x 11") shall be provided.

3.3.5.1 Instrument and Controls Operation

Instruments and controls shall be readily accessible and identifiable for the seated operator in daylight and at night. Response delay shall be unnoticeable by the operator. Operating instructions shall be affixed near the appropriate controls. The instruments and controls shall be operable by personnel wearing cold weather/arctic clothing or chemical warfare gear.

3.3.6 Electrical System and Lighting

Provide, using best commercial practices, the design and fabrication of the electrical and lighting system, clearance lights, four-way flashers, external cab mounted spot light(s), and engine work lights. Four marker lights shall be installed on the four corners of the loader to increase the loader's visibility to other drivers. The external cab mounted spot light(s) shall be capable of being operated from the inside of the cab and shall rotate to provide 360 degrees of spotlight coverage. Cab lighting shall be sufficient to allow the operator to safely perform all functions inside the cab during night operations. A continuously variable dimmer shall be provided for all cab instrument panel lighting, inclusive of bezel, backlight, dash lights and, dome light. An auxiliary 15-amp circuit with a separate circuit breaker shall be provided in the cab consistent with the Halvorsen Loader electrical system design. A NATO-style connector shall be incorporated.

3.3.7 Hydraulic System

Best commercial practices shall govern the design and fabrication. The Halvorsen Loader shall use fire resistant aircraft hydraulic fluid, NATO Code Number H-537. Hydraulic System temperature shall not exceed the minimum acceptable fluid interface temperatures of the component manufacturers. The system shall have a high pressure filtration system, pump case drain filtration, and a large capacity return filtration system.

3.3.8 Backup Power System

An onboard, integral power system shall be provided in the event of an engine or drive-train failure. This system shall allow the operator to raise a fully loaded deck (paragraph 3.5.3) at maximum weight capacity, within 30 minutes, to a height where the maintenance stands can be properly positioned for safe maintenance. This system shall also allow for a fully loaded deck (paragraph 3.5.3) at maximum weight capacity to be safely lowered from maximum height onto the maintenance stands that will support a fully loaded deck. The system shall aid in towing by providing steering assistance while the Halvorsen Loader is at GVWR.

3.4 Reserved

3.5 Required Function Operations/ Performance.

3.5.1 Travel Operations

Travel is defined as movement from loading area to the aircraft and vice versa. The Halvorsen Loader at gross vehicle weight rating (GVWR) shall be capable of travel in forward and reverse, and shall be capable of maintaining a speed of 15 miles per hour (mph) forward on dry pavement consistent with airfield ramp, runways and aerial port locations. The Halvorsen Loader shall have inching capability in both the forward and reverse directions at a speed 0 to 5.0 mph with a gradual increase in speed from zero with the deck at any elevation. The Halvorsen Loader shall traverse 5 degree (8.75%) side slopes and 5 degree (8.75%) grades; semi-prepared surfaces [improved gravel, perforated steel planking (PSP), rapid runway repair (RRR) slab], rain, snow, sleet, sand, standing water, and mud on improved surfaces at reduced speeds. The

Halvorsen Loader shall turn 180 degrees in either direction on a 50-foot wide taxiway without any of the wheels leaving the pavement in three or less total forward and reverse movements.

3.5.2 Deck Operations

The deck, with any paragraph 3.5.3 cargo load, shall pitch ± 6.0 degrees, roll ± 4.0 degrees, and side shift ±3.0 inches. It shall elevate from 41.0 to 220.0 inches (ground to the top of the rollers) in pallet, platform, and container configuration with any load up to maximum load. In rolling stock configuration the deck shall elevate from 39.0 to 220.0 inches (ground to the top of the deck) with any load up to maximum load. It shall be capable of at least 12 full extensions, retractions, and adjustment cycles per hour at maximum load.

3.5.3 Cargo Operations

The Halvorsen Loader shall accept HCU-6/E pallets in the 108-inch bias (single, up to three pallets and pallet trains up to and including three pallets), and shall accept pallets in the 88-inch bias, see Figure 1. The Halvorsen Loader shall have the capability of accepting three pallets in the 88-inch bias, with restraint provided by a removable/ relocated guide rail. Individual pallets shall be loaded with a maximum of 10,000 pounds for a total pallet weight of 10,350 pounds. The Halvorsen Loader shall be capable of transporting and elevating cargo with a total weight up to and including 25,000 pounds. It shall accept Type V airdrop platforms in 8-, 12-, 16-, and 20-foot lengths; Container Delivery System (CDS) (a 4' x 4' A-22 container weighing up to 2,500 pounds on a 1" thick plywood sheet) loads; and combinations of pallets, platforms, containers, and rolling stock loads. IAW Subpart F of Title 49 CFR, part 172 of Hazardous Material Regulation and AFM 91-201 section 2.71, hazardous material placards shall be mounted on the front, rear, right and left side of the loader and shall be visible to emergency crew while in the transport or load mode. The Halvorsen Loader shall accept rolling stock with a maximum of 25,000 pounds (single axle weight maximum to 15,000 pounds). The deck shall withstand 7,500 pound tire loads (tires are 8.25 X 15 NHS inflated to 100 psi). The deck shall be reconfigurable to accommodate rolling stock cargo by 1 person in less than 10 minutes no tools will be required. It shall accept oversize loads (three coupled pallets, 108 inches wide and 268 inches long) and cargo, which exceeds 117 inches wide or 105 inches high. The deck shall have the capability to load/unload pallets from forklifts (rear and side) and K-loaders (front, rear and right side of the Halvorsen Loader). Tine trough protection is required at the entrance to the rear tine troughs. Reconfiguring for side loading shall require no more then 15 minutes for two people. Tine trough covers shall be removable by personnel wearing cold weather/artic gear or chemical warfare gear. A loading crew, if required, to manually push and to rotate pallets shall not exceed four (4) persons.

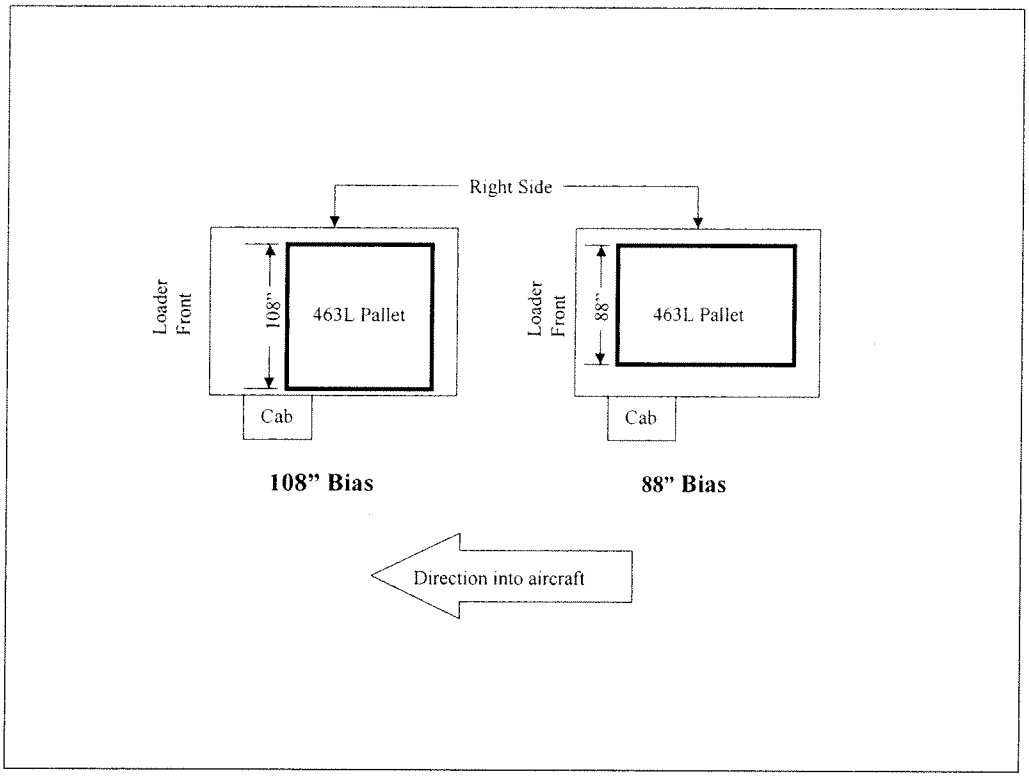

Figure 1
Pallet Bias/Orientation

3.5.4 Towing Operations

The Halvorsen Loader shall be readily configurable to a towable condition, with the maximum load condition in paragraph 3.5.3, with minimal disassembly/conversion with common, non-powered hand tools (2 people, 15 minutes). The Halvorsen Loader can be towed from the front or rear up to 500 feet at speeds up to 5 mph with no disassembly. For longer distance towing, the driveshaft shall be disconnected.

3.6 Reliability and Maintainability

3.6.1 Mean Time Between Failure (MTBF)

At the start of operational testing the Mean Time Between Failure (MTBF) of the Halvorsen Loader, expressed as function of engine operating hours shall be at 40 hours. At the end of production and after reliability growth, the MTBF shall be at least 60 hours when measured in a controlled End of Production Test performed by the contractor in a similar manner to that used for the OT/R&M test of the first four LRIP loaders. The contractor shall perform all test activities including operation, maintenance, data collection, and analysis during this test. The government will be allowed full access to the testing activities and facility and their involvement is encouraged. A failure is defined as the event in which an item, or part of an item, does not, or would not perform as specified.

3.6.2 Maintainability

Components shall be easy to access, remove, and replace. Removal of a component to access and remove another component shall be minimized. All maintenance actions shall be accomplished using common hand tools, test, measurement, and diagnostic equipment. Special tools or equipment shall be minimized. Drain plugs shall be located in easily accessible locations, and shall minimize the removal of parts other than any

necessary guards. Draining of fluids shall not cause fluids to run onto other components and shall be located so appropriate containers can easily be placed under the drain to catch all of the fluid. Repair time is the time required for one mechanic and helper if required (i.e. lifting devices and/or unskilled worker used to move large, heavy and awkward parts where safety is a factor or property damage could occur) to fault isolate, access, remove, repair, replace, adjust, calibrate, and checkout. Standard existing commercial test equipment shall be used for diagnostics of the Halvorsen Loader. Operator care is pre-use inspection and fluid replenishment (except refueling). Operator care shall not exceed commercial or current Air Force procedures, and shall require no more than 20 minutes. Scheduled maintenance shall be annually or 400 hours, whichever comes first, but shall not exceed manufacturer's specifications. The loader shall be equipped with an automatic lubrication system and maintenance free bearings to minimize scheduled maintenance actions. The loader shall have no more than 2 manual lube points.

3.6.3 Maintenance

Mean time to repair (MTTR) at the component level shall be less than or equal to 3.5 hours for scheduled and unscheduled maintenance. The Halvorsen Loader maintenance man-hours per operation hour (MMH/OH) shall be determined by test and shall be less than 0.3 MMH/OH. Maintenance hours include man-hours expended for scheduled (excluding operator checks and services) and unscheduled maintenance including time spent for inspection and diagnostics.

3.6.4 Major Component Repair

The Halvorsen Loader shall be designed so that a major component may be removed in 3.5 hours and replaced in 3.5 hours. Major components are those items listed in Attachment A to this specification.

3.6.5 Maintenance Concept

The Halvorsen Loader shall be designed to allow for three levels of maintenance [i.e. organizational (operator), intermediate (base level) maintenance and depot) for all scheduled and non-scheduled maintenance actions. The Halvorsen Loader shall be designed so that one 5-level special purpose vehicle mechanic (AFSC 2T351) and a helper, if required, (i.e. lifting devices and/or unskilled worker used to move large, heavy and awkward parts where safety is a factor or property damage could occur) shall be able to perform all organizational and intermediate maintenance actions. Special purpose vehicle mechanic capabilities can be found in AFM 36-2108. Maintenance Concept definitions can be found in AFI 24-302 and AFM 24-307. Depot overhaul of USAF vehicles is found in T.O. 36A-1-112.

3.7 Environmental Conditions

The Halvorsen Loader shall be capable of storage and all operations specified herein at ambient temperatures of -40° F to 125° F for operation and -60° F to 160° F for storage. External provision to assist cold weather starting will be used. The external system shall be limited to 30 amps and be operable from 100 to 220v, 50 to 60 Hz. At -40° F it shall take no longer than 6 hours for the engine/engine components/fluids to warm up. The Halvorsen Loader shall be capable of operations and storage as follows:

1) At up to 5,000 feet altitude.

2) At 0% - 100% relative humidity.

3) During part-time exposure to rain (13 cm/hour), wind velocity of 35.40 ft/sec.

4) During part-time exposure to dust (velocity 1,750 fpm, concentration 0.2 to 0.3 g/ft^3)

5) During part-time exposure to sand (velocity 4,050 fpm, concentration 0.05 to 0.0773 g/ ft^3)

Part-time exposure is 5.0% of the time. Engine fluids and fuel may be changed to accommodate the temperature range.

3.8 Transportability

The Halvorsen Loader shall be transportable on a rail car, ship, and 96-inch wide commercial semi-trailer, and be capable of being sling loaded. The Halvorsen Loader shall be capable of being sling loaded, MIL-STD-209J shall be used as a guide. The Halvorsen Loader shall be air transportable on C-130, C-141, C-17, and C-5 aircraft with tire pressure not to exceed 100psi. The Halvorsen Loader shall be self-propelled on

and off the aircraft under dry conditions; parking shoring is permitted, approach or rolling shoring is not permitted. No fluids shall spill during loading, unloading, or normal flight maneuvers (20° nose up or down, 45° bank angle). Preparation and restoration (including tire pressure adjustments before and/or after air transport) shall each take 90 minutes maximum for three persons using common non-powered hand tools without use of vehicles or equipment (i.e. forklifts, cranes) The cab will not require disassembly and shall be equipped with an adjustment mechanism to raise/lower the cab to facilitate easier cab stowing. All equipment removed for transport shall be stored on the Halvorsen Loader; and shall permit driving and storage in air transport configuration. Vehicle restraint provisions (10) shall be accessible in all configurations and rated with a minimum rating of 25,000 pounds, marked for capacity, with a clear opening compatible with MB-2 chains and chain tensioners. In air transport configurations, the loader shall be capable of being restrained and withstanding, without loss of serviceability, 2.0 G up and 4.5 G down accelerations. The loader during airlift shall be capable of being restrained and withstanding, without loss of structural integrity, 3.0 G forward, 1.5 G aft, and 1.5 G lateral accelerations. The loader shall be capable of withstanding an in-flight rapid decompression of 8.3 psi within 0.5 sec. without endangering the aircraft or aircrew. Design guidance for air transportability, aircraft interface parameters and aircraft structural limitations will be obtained from MIL-HDBK-1791. For C-17 loading, the loader shall have an approach angle greater than 16 degrees to prevent contact with the C-17 ramp toes during loading. In the C-130 transport configuration, with no operator and a ¾ tank of fuel, maximum weight shall not exceed 32,000 pounds, maximum axle weights shall not exceed 13,000 pounds. The maximum track width shall be 102 inches or less, and at least 1.0 inch sidewall and 6.0 inches overhead clearance shall be maintained between the loader and the C-130 at all times during loading and flight. The restrained loader shall allow for loadmaster in-flight access from the front to the rear of the C-130. The minimum access aisle will be at least 14-inches width by 72-inches height for walking and 30-inches width by 40-inches high for crawling.

3.9 Materials and Processes

Best commercial practices shall govern selection of materials used. Wood and magnesium and its alloys shall not be used. Vinyl, polyvinylchloride (PVC), polyester, and corrosive type RTV are prohibited in electrical systems, except for PVC insulated wire as part of commercial components. If these materials are used near an electrical system, the area shall be vented. Dissimilar metals shall not be used in intimate contact with each other. Appropriate provisions shall be incorporated so that there are no fluid traps on the Halvorsen Loader. Faying surfaces of all structural joints, except welded joints, shall be sealed to preclude fluid intrusion. A welding program, certification of welders, and welding processes and procedures shall be in accordance with American Welding Society (AWS) or equivalent.

3.9.1 Hazardous Materials Management

Use of hazardous materials on this program shall be minimized to the greatest extent that is practical. If any hazardous materials are used to manufacture or maintain the end items on this contract, the contractor shall develop, maintain and use a hazardous materials management plan that meets the intent of National Aerospace Standard 411 (NAS-411). The system requirements may be tailored to conform to current company practices. The system shall be adequate enough to ensure that the hazardous materials are identified, tracked, managed and residuals properly controlled in a manner that is consistent with Federal, State, and Local laws, rules and regulations. This plan shall be made available for review by the Government upon request.

3.9.2 Ozone Depleting Substance

Ozone Depleting Chemicals (ODCs) shall not be used on this program.

3.9.3 Protective Coatings

Best commercial practices shall govern the application of the protective coating(s) used. Specific cleaning, pretreatment(s) and coating(s) shall be selected to promote corrosion protection of the materials and production process selected to ensure the Halvorsen Loader meets the life requirements. Protective coatings that will chalk, chip, crack, or scale with age or extremes of climatic conditions shall not be used. Surfaces shall be smooth where feasible to facilitate decontamination. The Halvorsen Loader components, including the inside of built-up box beams, shall be protected from corrosion. The color of the outer surfaces of the Halvorsen Loader (including fasteners, wheel rims, drip rails, door handles, trim rings, etc.) and interior

surfaces of the cab and compartments shall be in accordance with FED-STD-595, forest green color number 24052 or FED-STD-595, Desert Rose color number 23448 as specified by USAF prior to production. Contrasting colors may be employed for safety purposes where deemed necessary. On tan colored loaders, the interior surface of the rear emergency pallet stop will be painted with a red stripe starting at the top and reaching 1.5" down (per ECP 008). Hydraulic and electrical connectors, lubricated bearing surfaces and other pliable/flexible surfaces where flexure results in paint failure shall not be painted.

3.9.4 Electromagnetic Radiation

The Halvorsen Loader shall be in accordance with the AF Ground requirements of MIL-STD-461D: RE102 and RS103, Table IV. For requirement RE102, the limit level shall be extended to 50 dB above a microvolt per meter for frequencies 10 kHz through 200 mHz.

3.9.5 Nameplates or Product Markings

Identification and marking shall be in accordance with 3.13.9.1 - 3.13.9.8 of SAE ARP 1247C. Information shall include rated load for cargo and GVWR. A transportation data plate shall be provided on the inside of the cab door, containing the following information for each transport configuration:

- Side and rear silhouette views of the Halvorsen Loader marked with horizontal and vertical location of the center of gravity
- Shipping weight
- Loading cubage
- Overall length, width, and height
- General air transport data
- Sling lifting procedures and capacity

Markings shall be in accordance with FED-STD-595, flat black color number 37038.

3.9.6 Interchangeability

The Halvorsen Loader components shall be interchangeable between Halvorsen Loader loaders in accordance with 3.13.6.1 - 3.13.6.3 of SAE ARP 1247C.

3.9.7 Safety.

3.9.7.1 General

The Halvorsen Loader shall be in accordance with 3.9.6 - 3.9.14 and 3.9.19 of SAE ARP 1247C. All flat surfaces of the deck and catwalks are considered walkways and shall be provided with a abrasive coated surface. Use of abrasive impregnated aluminum or steel plate and adhesive applied sheet is not acceptable. The Halvorsen Loader shall be designed to minimize the potential for fire propagation due to electrical or fuel system failure. Two (2), 2A:10BC fire extinguishers, in accordance with AFM 91-201, shall be mounted on the Halvorsen Loader, one in close proximity to the operator, and one readily accessible to ground personnel on the right-hand side. All movement controls shall be of "deadman type" and self-centering (except for such devices as the parking brake, steering control, transmission selectors, and hydraulic pump). Emergency shutdown switches in accordance with 3.13.1.4.14 and 3.13.1.4.16 of SAE ARP 1247C shall be provided on the instrument panel and near the backup hydraulic power supply switch. An interlock shall prevent the engine starter from engaging unless the Halvorsen Loader transmission is in "neutral." Maintenance supports shall be provided to support the maximum loaded deck to facilitate maintenance. Maintenance supports shall be deployed by a maximum of two people. Operators shall not straddle any part of the Halvorsen Loader while deploying the maintenance supports. Loose parts, e.g., pins, plugs and valve caps, shall be securely attached so they cannot separate from the Halvorsen Loader. Pallet stops shall have contrasting color that will allow them to be visible from the cab during daylight and nighttime operations and all weather conditions when cargo does not block the operator's view.

The Halvorsen Loader shall be equipped with fall restraint-attachment points 7 feet from the rear end of both catwalks. These tie down rings shall be painted yellow. Additionally, a 3-inch wide yellow line shall be painted on both catwalks of the loader. The lines should be painted at the second to last pallet lock on the loader with the words "HARNESS REQUIRED AREA" stenciled above the line on the side nearest the rear end of the loader catwalk using 1 ½ -inch wide and 1 ¾-inch high yellow block letters. The intention is

prevent personnel from inadvertently falling from the deck of the loader especially when it is in a fully-raised position. Use of a harness will be required when working beyond the yellow line.

3.9.7.2 System Safety

The Contractor shall use MIL-STD-882 as a guide to conducting and documenting their System Safety Program. For program approach and methodology reference General Requirements, paragraph A.,4. For System Hazard Analysis, Safety Assessment Report and Safety Review of Engineering Change Proposals, reference Tasks 205, 301 and 303, respectively.

3.9.7.3 Structure

The Halvorsen Loader shall be designed and fabricated to best commercial practices for a maximum load of 25,000-pounds. The Halvorsen Loader shall have a static safety factor of 3.0 and a dynamic safety factor of 2.0 at a minimum of 17,000 pounds. Safety factors shall be based on minimum material yield strength.

3.9.7.4 Stability

The Halvorsen Loader shall be capable of performing all lifting, inching and loading functions without contacting the aircraft when subjected to a 40-knot wind. The stability ratio of the Halvorsen Loader shall be in accordance with 3.13.1.9 - 3.13.1.9.1 of SAE ARP 1247C up to 40 knots. The loader shall not have an unsafe tendency to tip, tilt, yaw, sway, or skid while in the most adverse load configuration and while undergoing maximum speed maneuvers (such as emergency braking and obstacle avoidance).

3.9.7.5 Sound Levels

The time weighted average (TWA) of the Halvorsen Loader generated exterior sound levels over a 12-hour period shall not exceed 84 dBA when measured 5 feet above the ground and 3 feet from the Halvorsen Loader. Cab interior sound level shall not exceed 84 dBA while measured in accordance with SAE J336a.

3.10 Facilities and Facilities Equipment

Base level facilities upgrades or expansions shall not be required to incorporate the Halvorsen Loader into the Air Force current fleet operation.

3.11 Service Life

The Halvorsen Loader shall be designed with a service life of 30 years with at most 2 scheduled overhauls. Commercial parts shall be used to the maximum extent possible to ensure Halvorsen Loader supportability throughout its life.

3.12 Training

The Halvorsen Loader shall be operable by Air Force airfreight specialists (AFSC 2T2X1), or similarly skilled operators, without the use of specialized training or equipment trainers outside the normal Air Force training capabilities.

3.13 Computer Resource Requirements

Not Applicable.

4 VERIFICATION

4.1 Methods of Verification

The contractor shall verify the applicable requirement of Section 3 using the verification methods as identified in 4.2 where significant design changes (e.g., changes from Phase I Contractor Test and Operational Assessment) have been made to the Halvorsen Loader. Apparatus shall be laboratory precision type, calibrated to ensure laboratory accuracy. A verification cross-reference matrix is shown in Table 2.

4.1.1 Verification Definitions

Analysis–Analysis is defined as a visual verification that the PIDS requirement has been met by technical evaluation of equations, charts, reduced data, and/or representative data.

Examination (Inspection)–Examination is defined as a visual verification that the system (including system documentation) complies with the PIDS requirements.

Demonstration–Demonstration is defined as an uninstrumented test, where success is determined by observation alone. Included in this category are tests that require simple quantitative measurements such as dimensions, time to perform, etc.

Test–Test is defined as verification that a thorough exercising of the applicable element under appropriate conditions in accordance with applicable test procedures and a thorough analysis of the data meet a PIDS requirement. Alternate test method(s) are permitted if the preferred method of test is determined to be unsafe for personnel and could damage equipment. The alternate test method(s) shall duplicate to the extent possible the test that would have been performed using the Halvorsen Loader. Sufficient rationale will be supplied as to why the preferred method(s) of testing is determined to be unsafe. The procuring activity shall approve alternate test method(s).

Qualification by Similarity - Qualification by similarity is a prediction based on existing data with detailed examination of the differences and similarities between the previously qualified item and the item under consideration.

4.1.2 Test Scenarios.

4.1.2.1 Contractor Test (CT)

Contractor testing shall be conducted to evaluate changes to the Halvorsen Loader as a result of deficiencies identified during Phase I Contractor Test (CT) and Operational Assessment (OA). Evaluation may be by analysis, demonstration and/or testing. Any changes to the Halvorsen Loader must still comply with the technical requirements of this PIDS. The contractor may use the pre-production Halvorsen Loader(s) modified to a "production representative" configuration to verify changes needed as a result of Phase I CT and OA have been successfully incorporated into the design before producing the First Production Unit (FPU).

4.1.2.2 First Production Test (FPT)

The production contractor shall conduct an FPT in Phase II, to verify: that differences between pre-production and production loaders did not adversely affect performance; and certify that the production loaders are ready for Operational Test (OT). FPT will be accomplished on the first production Halvorsen Loader for those requirements asterisked (*) in 4.2.4 and "X" in Table 2.

4.2 Detailed Verification.

4.2.1 Design Analysis

A design analysis shall be performed to verify any changes to the production loaders has not affected the analysis performed on the Pre-production loaders during Phase I and remain in compliance with Section 3 herein. The analysis shall include, but is not limited to, basic and mission reliability predictions; maintainability predictions; fault tree analysis with a failure modes, effects, and criticality analysis (FMECA). A system hazard analysis; environmental analysis; a transportability analysis for semi-trailer, C-130, C-141, C-17, and C-5 transport; and a stability analysis in accordance with SAE ARP 1328, section IV. An aircraft interface analysis shall be performed to show that the Halvorsen Loader meets the requirements of NFPA 407. The entire Halvorsen Loader exhaust system shall not be within 10-ft. (3-m) radius of aircraft fuel system vents for all the aircraft listed in paragraph 3.1.1

4.2.2 Structural Analysis

The structural analysis of the Halvorsen Loader shall show that all changes to the structural members from Phase I meet the static safety factor of 3.0 and the dynamic safety factor of 2.0 at a minimum of 17,000 pounds. The analysis shall include loads applied in worst-case cargo configurations and accelerations expected. Local stress concentrations shall be included. Holes and welds are not required in the analysis; however, classical analysis of all localized stress concentrations shall be performed. The analysis shall be validated by the strain gage test. The gage measurements (±15% of the maximum stress) are required for validation. Loads to be analyzed shall include but are not limited to:

- Side shifting, rolling, and pitching the deck through all combinations from level to maximum travel in each of the following load conditions:

- The deck unloaded; loaded with two 10,000 pound and one 5,000 pound pallets centered on the deck;
- unbalanced load to the front and unbalanced load to the rear;
- And pallets in the 88-inch bias shifted to the right guide rail and shifted to the left guide rail.

- Repeated contact with a metal or wood surface on facilities at a vehicle speed of 2.5 mph with the Halvorsen Loader deck at elevations from minimum to 96 inches in one-foot increments without damage to the loader.
- Repeated impacts, a minimum of 14 impacts (seven impacts at 90 fpm and seven impacts with four people pushing pallets), from 10,000-pound pallets traveling at 90 fpm and four people pushing a pallet striking the guide rail opposite the side loading opening.

4.2.3 Examination of Product.

Each Halvorsen Loader shall be examined to verify compliance with Section 3 herein. A checklist that identifies each relevant requirement and the inspection results shall be used. Particular attention shall be given to materials, workmanship, dimensions, surface finishes, protective coatings and sealants and their application, welding, fastening, and markings. Proper operation of each Halvorsen Loader function shall be verified.

4.2.4 Mobility Testing.

The Halvorsen Loader shall comply with the requirements of 3.5.1 (Travel Operations). The Halvorsen Loader shall be tested to the following mobility criteria with simulated maximum load (25,000 +/- 150 pounds) in accordance with the following:

*	Paved roadway miles	FPT = 50 miles, average 15 mph
*	Sudden Stops	FPT = 10 sudden stops
*	Turns (at reduced speeds)	FPT = 12 each left and right turns
*	Figure "8s"	FPT=3.

The contractor may use the Phase I mobility test course or may design a new mobility test course to test the above criteria in such a way that the Halvorsen Loader will see a combination of tests and not just one particular test. The procuring activity shall approve the mobility course design to be used for mobility testing.

4.2.5 Deck and Lift System Testing

The Halvorsen Loader shall comply with the requirements of 3.3.4 -3.3.4.8. The deck and lift system shall be tested to 25 full extension and retractions with a minimum simulated load of 25,000 pounds (+/- 150 pounds).

4.2.6 Air Transportability Demonstration

Demonstration shall validate air transport analysis and compliance with the requirements of 3.8. The Halvorsen Loader shall be configured for and successfully accomplish a sling loading.

4.2.7 External Interface Demonstration

Compliance with the requirements to interface with other Halvorsen Loaders, HCU-6/E pallets, 20-foot Type V platforms, rolling stock, oversize cargo, outsize cargo, and 3.5.3 shall be verified.

4.2.8 Reliability and Maintainability Verification

The MTBF for the Halvorsen Loader shall be substantiated by tests during the OT and R&M. The tests will be completed prior to milestone III to verify the analysis.

	Actual Day	Hours During Actual Day																								Simulated Days	Weight on Loader
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
M	DAY 1								D01			D02		D03		D04			D05								5	6K
	DAY 2								D06			D07			D08			D09									4	15K
M	DAY 3								D10			D11		D12			D13										4	15K
	DAY 4								D14			D15		D16		D17			D18								5	15K
M	DAY 5								D19			D20			D21			D22									4	15K
	DAY 6								D23			D24		D25		D26			D27								5	25K
M	DAY 7								D28			D29		D30		D31			D32								5	15K
	DAY 8								D33			D34			D35			D36									4	15K
M	DAY 9								D37			D38		D39			D40										4	6K
	DAY 10								D41			D42		D43		D44			D45								5	15K
M	DAY 11								D46			D47			D48		D49										4	15K
	DAY 12								D50			D51		D52			D53										4	6K
M	DAY 13								D54			D55															2	25K
																											55

Loader weight Profile

35 days @ 15K = 65%, 13 days @ 6K = 25%, 6 days @ 25K = 10 %

M= Mobility run of 4 miles at 10 mph

D## =Simulated Surge Day

The R&M surge course will have three locations, A – B – C. There will be a transportation cycle (TC) and an elevator cycle (EC). The completion on one (1) A – B – C circuit will count as one (1) surge day for a total of 55 surge days. The TC portion may be a .0.5 mile lap or a mobility run of 4 miles at 10 mph. Each EC requires the deck pitch, roll, and side shift functions to be adjusted to its fullest possible range of motion. Each lap of the R&M course will include three (3) TCs and seven ECs as follows:

(1) TC location A:

- Download three (3) 463L pallets onto the Halvorsen Loader at no higher than 40 inches.
- Transport the pallets around the paved mobility course.
- Upload the three (3) 463L pallets from the Halvorsen Loader at no higher than 40 inches.

(2) TC and EC location B:

- Download three (3) 463L pallets onto the Halvorsen Loader at no higher than 40 inches.
- Transport the pallets around the paved mobility course.
- Upload the three (3) 463L pallets from the Halvorsen Loader at a height of at least 220 inches.

(3) EC at location C:

Download three (3) 463L pallets onto the Halvorsen Loader at a height of at least 220 inches.

- Lower the Halvorsen Loader to the minimum extension.
- Raise the Halvorsen Loader to a height of at least 220 inches.
- Upload the three (3) 463L pallets onto the Halvorsen Loader.
- Repeat the above four steps five move times for a total of six (6) ECs.
- Lower the empty Halvorsen Loader.

(4) TC at location C:

- Drive the Halvorsen Loader (unloaded) around the paved mobility course. This will put the Halvorsen Loader back at location A.

Upon completion of the R&M course the Halvorsen Loader will have traveled over 300 miles and handled more than 2,400 463L pallets.

4.2.9 Maintenance Demonstration

During the CT a maintenance demonstration involving the removal and replacement of five (5) major components will be performed. The five (5) major components will be from the appendix A. Any

maintenance action taken during contractor test (e.g. mobility, strain gauge, reliability, etc) shall be used to evaluate the maintenance of the Halvorsen Loader to meet the requirements of paragraphs. 3.6.2 - 3.6.3.2.

4.2.10 Backup Power Test

The Halvorsen Loader shall demonstrate its ability to meet the requirements of paragraph. 3.3.8. A minimum of 5 test points for each lift and lower capability at maximum capacity (25,000 +/- 150 pounds) shall be performed during the course of the entire test period. If during the test, use of the backup power system is required for maintenance, this event shall count toward the total test points.

4.2.11 Strain Gauge Test

The structural analysis shall be validated and compliance with paragraph 3.9.6.1 shall be verified by a strain gauge test. A minimum of 50 gauges shall be positioned on high stress areas as indicated by the analysis (each tri-axial gauge is considered to be three uni-axial gauges) and the placement of the gauges shall be coordinated with the procuring office. Strains shall be recorded while the Halvorsen Loader is subjected to the worst-case load conditions identified in the analysis with the Halvorsen Loader in all configurations and during Mobility Testing 4.2.4. Readings for each gauge and for each load cycle shall be recorded and provided in the test report. If gauge measurements exceed the analysis results, safety factors shall be recomputed based on the gauge measurements.

4.2.12 Stability Test

Compliance with 3.9.7.2 shall be demonstrated; the stability ratio shall be measured in accordance with SAE ARP 1328, section V, paragraphs A, B.

4.2.13 Sound Level Test

Compliance with paragraph 3.9.7.5 shall be tested in accordance with SAE J366b and J336a.

4.2.14 Environmental Conditions Tests

The Halvorsen Loader shall be tested to demonstrate operation and functionality to the requirements of paragraph 3.3.5.1 and paragraph 3.7 as governed by the size of the test facility. Soak periods shall be adequate for all Halvorsen Loader components to stabilize at the test temperature. Compliance with the drift rate requirement of paragraph 3.3.4.1 shall be verified at both temperature extremes.

4.2.15 Electromagnetic Compatibility Test

Compliance with paragraph 3.9.4 shall be tested per MIL-STD-462D using Method RE 102 and RS 103.

4.2.16 Major Component Removal and Replacement Demonstration

The contractor shall perform this demonstration to verify the requirements of paragraph 3.6.4, Appendix A, lists the major components.

4.2.17 Human engineering

Compliance with paragraphs 3.3.4.2, 3.3.5, and 3.3.5.1 shall be demonstrated.

4.2.18 Towing Demonstration

The Halvorsen Loader, at both empty and GVWR weights, shall demonstrate the ability to be towed from each of the forward and rear towing provisions in the event of a power failure or other non axle/wheel problem(s) which prohibit the Halvorsen Loader from being safely self propelled. The Halvorsen Loader shall exhibit stability and remain under operator control while in tow during turning and stopping maneuvers. Disassembly/conversion time with common, non-powered hand tools, if necessary, shall be recorded to determine compliance with paragraph 3.5.4.

4.2.19 Powertrain Demonstration

The powertrain shall demonstrate that it is operable with all grades of diesel fuels and grades of JP-5 and JP-8 to show compliance with paragraph 3.3.1.

4.2.20 Restraint Demonstration

The restraint provisions shall be demonstrated to show that they are compatible with the MB- I chains, MB-I chain tensioners, and CGU-1/B straps.

4.2.21 Ladder, Catwalks, and Handrail Demonstration

The ladder, catwalks, and handrail demonstration shall show that the requirements of paragraph 3.3.4.7 are met.

4.2.22 Cab and Electrical System Demonstration

The cab and electrical system shall be demonstrated to show compliance with the requirements in paragraphs 3.3.5, 3.3.5. 1, and 3.3.6.

Table 2 VERIFICATION CROSS-REFERENCE MATRIX

PIDS Section 3 Requirement	Verification Method					PIDS Section 4 Verification
	A = analysis E = Examination D = Demonstration T = Test F = FPT					
	A	E	D	T	F	
3.1 Mission						Not Applicable
3.1.1 Aircraft Interface	X					4.2.1 Design Analysis
3.1.2 Ground Equipment Interface	X		X			4.2.1 Design Analysis 4.2.7 External Interface Demonstration
3.2 Threat						Not Applicable
3.3 Halvorsen Loader System Requirements						Not Applicable
3.3.1 Powertrain	X	X	X			4.2.1 Design Analysis 4.2.3 Examination of product 4.2.19 Powertrain Demonstration
3.3.2 Steering System	X			X	 X	4.2.1 Design Analysis 4.2.4 Mobility Test
3.3.3 Brake System	X			X	 X	4.2.1 Design Analysis 4.2.4 Mobility Test
3.3.4 Deck and Lift System *EN-MC2-083	X	X	X	X	X X X X	4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.3 Examination of Product 4.2.5 Deck and Lift System Test 4.2.7 External Interface Demonstration
3.3.4.1 Lift System	X			X	X	4.2.1 Design Analysis 4.2.5 Deck and Lift System Test 4.2.14 Environmental Conditions Test

PIDS Section 3 Requirements	Verification Method					PIDS Section 4 Verification
	A = analysis E = Examination D = Demonstration T = Test F = FPT A	E	D	T	F	
3.3.4.2 Guide Rails and Pallet Locks	X	X	X		X	4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.3 Examination of Product 4.2.17 Human Engineering Demonstration
3.3.4.3 Emergency Pallet Stops	X	X		X	X	4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.3 Examination of Product 4.2.11 Strain Gage Test
3.3.4.4 Restraint Provisions	X	X	X		X	4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.3 Examination of Product 4.2.20 Restraint Demonstration
3.3.4.5 Bridge Plates			X			
3.3.4.6 Powered Conveyor System	X	X	X	X	X	4.2.1 Design Analysis 4.2.3 Examination of Product 4.2.5 Deck and Lift System 4.2.7 External Interface Demonstration
3.3.4.7 Ladder, Catwalks, and Handrails	X	X	X			4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.3 Examination of Product 4.2.21 Handrail Demonstration 4.2.21 Ladder, Catwalks and Handrail demonstration
3.3.4.8 Storage Provisions	X	X				4.2.1 Design Analysis 4.2.3 Examination of Product

PIDS Section 3 Requirement	Verification Method					PIDS Section 4 Verification
	A = analysis E = Examination D = Demonstration T = Test F = FPT A	E	D	T	F	
3.3.5 Cab	X	X	X			4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.3 Examination of Product 4.2.17 Human Engineering Demonstration 4.2.22 Cab and Electrical System Demonstration
3.3.5.1 Instrument and Controls Operation	X	X	X		X	4.2.3 Examination of Product 4.2.14 Environmental Conditions Test 4.2.17 Human Engineering Demonstration 4.2.22 Cab and Electrical System Demonstration
3.3.6 Electrical System and Lighting	X	X	X			4.2.1 Design Analysis 4.2.3 Examination of Product 4.2.22 Cab and Electrical System Demonstration
3.3.7 Hydraulic System	X	X				4.2.1 Design Analysis 4.2.3 Examination of product
3.3.8 Backup Power System				X	X	4.2.10 Backup Power Test
3.4 Reserved						Not Applicable
3.5 Required Function Operations/ Performance						Not Applicable
3.5.1 Travel Operations	X			X	X	4.2.1 Design Analysis 4.2.4 Mobility Test
3.5.2 Deck Operations	X			X	X	4.2.1 Design Analysis 4.2.5 Deck and Lift System Test
3.5.3 Cargo Operations	X		X		X	4.2.1 Design Analysis 4.2.7 External Interface Demonstration

PDS Section 3 Requirement	Verification Method					PDS Section 4 Verification
	A = analysis E = Examination D = Demonstration T = Test F = FPT					
	A	E	D	T	F	
3.5.4 Towing Operations	X		X			4.2.2 Structural Analysis 4.2.18 Towing Demonstration
3.6 Reliability and Maintainability						4.2.8 R&M Test
3.6.1 Mean Time Between Failure (MTBF)			X	X	X	4.2.1 Design Analysis 4.2.8 R&M Test 4.2.9 Maintenance Demonstration
3.6.2 Maintainability	X		X	X		4.2.1 Design Analysis 4.2.9 Maintenance Demonstration
3.6.3 Maintenance			X	X		4.2.9 Maintenance Demonstration
3.6.4 Major Component Repair			X			4.2.16 Major Component Removal and Replacement Demonstration
3.6.5 Maintenance Concept	X		X			4.2.1 Design Analysis 4.2.9 Maintenance Demonstration
3.7 Environmental Conditions	X		X	X		4.2.1 Design Analysis 4.2.14 Environmental Tests 4.2.17 Human Engineering Demonstration
3.8 Transportability	X		X			4.2.1 Design Analysis 4.2.6 Transportability Demonstration
3.9 Material and Processes	X	X			X	4.2.1 Design Analysis 4.2.3 Examination of Product
3.9.1 Hazardous Material Management						Not Applicable
3.9.2 Ozone Depleting Substance (ODCs)						Not Applicable
3.9.3Protective Coatings	X	X				4.2.1 Design Analysis 4.2.3 Examination of Product

PIDS Section 3 Requirement	Verification Method					PIDS Section 4 Verification
	A = analysis E = Examination D = Demonstration T = Test F = FPT					
	A	E	D	T	F	
3.9.4 Electromagnetic Radiation				X		4.2.15 Electromagnetic Compatibility Test
3.9.5 Nameplates and Product Marking		X			X	4.2.3 Examination of Product
3.9.6 Interchangeability		X				4.2.3 Examination of Product
3.9.7 Safety	X	X		X		4.2.1 Design Analysis 4.2.2 Structural Design 4.2.3 Examination of Product 4.2.15 Electromagnetic Compatibility Test
3.9.7.1 General		X		X		4.2.1 Design Analysis 4.2.2 Structural Design 4.2.3 Examination of Product
3.9.7.2 System Safety		X		X		4.2.1 Design Analysis 4.2.2 Structural Design 4.2.12 Stability Test
3.9.7.3 Structure	X			X		4.2.1 Design Analysis 4.2.2 Structural Analysis 4.2.11 Strain Gage Test
3.9.7.4 Stability	X			X		4.2.1 Design Analysis 4.2.12 Stability Test
3.9.7.5 Sound Levels				X		4.2.13 Sound Level Test
3.10 Facilities and Facilities Equipment	X					4.2.1 Design Analysis
3.11 Service Life						Not Applicable
3.12 Training	X					4.2.1 Design Analysis
3.13 Computer Resource Requirements						Not Applicable

5 Packaging

5.1 PREPARATION

Preparation for delivery shall be in accordance with the terms of the contract.

ATTACHMENT A, Table 3

Major Components List Next Generation Small Loader		
FMC Part #		Description
623-5393		Cylinder, Front Side Shift
623-5394		Cylinder, Rear Side Shift
623-5396		Cylinder, Main Lift
623-5397		Cylinder, Helper
623-8650		Cylinder, Pitch
623-5399-001		Cylinder, Roll, Front
623-5399-002		Cylinder, Roll, Rear
624-0330		Emergency Pump
623-8652		Hydraulic Pump
623-5382		Drive/Steer Axle
623-5384		Engine, Detroit Diesel 706LTE
623-5385		Transmission, Allison AT545

NAVICP PD-112007
18 March 2008

MHE SHOREBASE K-LOADERS - REQUIRED SAFETY MARKINGS

1. **Identification Plate / Label** – A manufacturer's identification plate shall be furnished and installed, by the manufacturer, on the MHE in accordance with ASME B56.1. In addition to this requirement, the identification plate shall contain, at a minimum, the manufacturer's make, model, unit serial number, nomenclature, contract number, lifting capacity, lift height, USN registration number, shipping weight, cube dimension, name or stamp of government inspector, date shipped, technical manual stock number, warranty expiration date and manufacturer's name and address.

2. **Operator Controls** - All operator controls shall be properly and clearly marked.

3. **Warning Decals and Labels** – Warning decals and labels shall be affixed onto the MHE to identify potential pinch points or other operator hazards.

4. **Safe Working Load and Vehicle Weight** – The safe working load (SWL) and vehicle weight (VW) shall be marked in 2-inch minimum high black block letters painted or vinyl letters, on both sides of the vehicle. Markings should be located on each deck beam in a strategic location that can be seen when the deck is down. (Example: SWL 6,000 LBS. VW 10,000LBS.)

5. **USN Numbers** - The seven digit USN number (example: 13-54321), assigned by NAVICP-M, shall be marked on each side and rear of the truck with 3-inch high black block painted or vinyl letters.

6. **Lead Free and Chromate Free Paint** – The following label shall be applied using ¼-inch minimum high black block painted or vinyl letters on each side of the truck. "Painted With Lead Free and Chromate Free Paint On (Month/Year) By (Manufacturer Name/Facility)".

7. **Lift and Tie-down Provisions** – All lift and tie-down points shall be identified with ¾-inch minimum high black block painted or vinyl letters.

8. **Tire Pressure** - The tire pressure (pneumatic tires only) for each tire shall be marked with ¾-inch minimum high black block painted or vinyl letters on each side of the MHE near the applicable tire. (Example; TP 80 PSI).

9. **Fuel Cap** – All fuel caps shall be color coded to properly identify the required fuel type. (Example: DIESEL = Green or GAS = Red).